

ABSTRACT OF THE DISCLOSURE

Activation of impurities is achieved without involving creation of a crystal defect or deformation by using phonon absorption. A laser beam (42) having a wavelength in a range of 16 to 17 μ m is irradiated onto silicon, to cause phonon
5 absorption. Before an energy supplied from the laser beam (42) diffuses around a portion which is irradiated with the laser beam (42), solid phase epitaxy in the portion finishes. Accordingly, crystallization occurs only in the portion which is irradiated with the laser beam (42), and does not occur in a portion which is not irradiated with the laser beam (42). Hence, heat is not excessively absorbed. Also, local phase change such as
10 melting and solidification is not caused.